C 10

```
MMM         MMM  MMM         MMM     GGGGGGGGGGGG  TTTTTTTTTTTTTTT     SSSSSSSSSSSS  TTTTTTTTTTTTTTT
MMM         MMM  MMM         MMM     GGGGGGGGGGGG  TTTTTTTTTTTTTTT     SSSSSSSSSSSS  TTTTTTTTTTTTTTT
MMM         MMM  MMM         MMM     GGGGGGGGGGGG  TTTTTTTTTTTTTTT     SSSSSSSSSSSS  TTTTTTTTTTTTTTT
MMMMMM   MMMMMM  MMMMMM   MMMMMM  GGG                    TTT        SSS                    TTT
MMMMMM   MMMMMM  MMMMMM   MMMMMM  GGG                    TTT        SSS                    TTT
MMMMMM   MMMMMM  MMMMMM   MMMMMM  GGG                    TTT        SSS                    TTT
MMM   MMM   MMM  MMM   MMM   MMM  GGG                    TTT        SSS                    TTT
MMM   MMM   MMM  MMM   MMM   MMM  GGG                    TTT        SSS                    TTT
MMM   MMM   MMM  MMM   MMM   MMM  GGG                    TTT        SSS                    TTT
MMM         MMM  MMM         MMM  GGG                    TTT           SSSSSSSSS           TTT
MMM         MMM  MMM         MMM  GGG                    TTT           SSSSSSSSS           TTT
MMM         MMM  MMM         MMM  GGG                    TTT           SSSSSSSSS           TTT
MMM         MMM  MMM         MMM  GGG   GGGGGGGGG        TTT                    SSS        TTT
MMM         MMM  MMM         MMM  GGG   GGGGGGGGG        TTT                    SSS        TTT
MMM         MMM  MMM         MMM  GGG   GGGGGGGGG        TTT                    SSS        TTT
MMM         MMM  MMM         MMM  GGG         GGG        TTT                    SSS        TTT
MMM         MMM  MMM         MMM  GGG         GGG        TTT                    SSS        TTT
MMM         MMM  MMM         MMM  GGG         GGG        TTT                    SSS        TTT
MMM         MMM  MMM         MMM     GGGGGGGGG           TTT        SSSSSSSSSSSS           TTT
MMM         MMM  MMM         MMM     GGGGGGGGG           TTT        SSSSSSSSSSSS           TTT
MMM         MMM  MMM         MMM     GGGGGGGGG           TTT        SSSSSSSSSSSS           TTT
```

```
**FILE**ID**MMGADJWSL                                    B 15
```

```
MM      MM  MM      MM    GGGGGGGG    AAAAAA    DDDDDDDD            JJ  WW      WW    SSSSSSSS  LL
MM      MM  MM      MM    GGGGGGGG    AAAAAA    DDDDDDDD            JJ  WW      WW    SSSSSSSS  LL
MMMM  MMMM  MMMM  MMMM  GG          AA      AA  DD      DD          JJ  WW      WW  SS          LL
MMMM  MMMM  MMMM  MMMM  GG          AA      AA  DD      DD          JJ  WW      WW  SS          LL
MM  MM  MM  MM  MM  MM  GG          AA      AA  DD      DD          JJ  WW      WW  SS          LL
MM  MM  MM  MM  MM  MM  GG          AA      AA  DD      DD          JJ  WW      WW  SS          LL
MM      MM  MM      MM  GG          AA      AA  DD      DD          JJ  WW      WW    SSSSSS    LL
MM      MM  MM      MM  GG          AA      AA  DD      DD          JJ  WW      WW    SSSSSS    LL
MM      MM  MM      MM  GG  GGGGGG  AAAAAAAAAA  DD      DD  JJ      JJ  WW  WW  WW          SS  LL
MM      MM  MM      MM  GG  GGGGGG  AAAAAAAAAA  DD      DD  JJ      JJ  WW  WW  WW          SS  LL
MM      MM  MM      MM  GG      GG  AA      AA  DD      DD  JJ      JJ  WWWW  WWWW          SS  LL              ....
MM      MM  MM      MM  GG      GG  AA      AA  DD      DD  JJ      JJ  WWWW  WWWW          SS  LL              ....
MM      MM  MM      MM    GGGGGG    AA      AA  DDDDDDDD        JJJJJJ    WW      WW  SSSSSSSS    LLLLLLLLLL      ....
MM      MM  MM      MM    GGGGGG    AA      AA  DDDDDDDD        JJJJJJ    WW      WW  SSSSSSSS    LLLLLLLLLL      ....

LL          IIIIII      SSSSSSSS
LL          IIIIII      SSSSSSSS
LL            II      SS
LL            II      SS
LL            II      SS
LL            II      SS
LL            II        SSSSSS
LL            II        SSSSSS
LL            II              SS
LL            II              SS
LL            II              SS
LL            II              SS
LLLLLLLLLL    IIIIII    SSSSSSSS
LLLLLLLLLL    IIIIII    SSSSSSSS
```

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```
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```

```
0000    ;
0000    ;                       MEMORY MANAGEMENT SERVICES TEST #4
0000    ;
0000    ;
0000            .TITLE  MMGADJWSL - TEST OF $ADJWSL SYSTEM SERVICE
0000            .IDENT  'V04-000'
0000    ;
0000    ;****************************************************************************
0000    ;*                                                                          *
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0000    ;*                                                                          *
0000    ;*                                                                          *
0000    ;****************************************************************************
0000
0000    ;++
0000    ; FACILITY: USER MODE MEMORY MANAGEMENT SERVICES TEST
0000    ;
0000    ; ABSTRACT: THIS SET OF ROUTINES TESTS THE MEMORY MANAGEMENT SERVICES
0000    ;
0000    ; ENVIRONMENT: USER MODE DIAGNOSTIC
0000    ;
0000    ; AUTHOR: PETER H. LIPMAN       , CREATION DATE: 6-JAN-77
0000    ;
0000    ; MODIFIED BY:
0000    ;
0000    ;       V02-012 SHZ0002         Stephen Zalewski        20-Aug-1980
0000    ;               Incorporated this program into MMG test package.
0000    ;
0000    ;       V02-012 TSC0003         Thomas Clark            25-Jul-1980
0000    ;               Added further tests to system services tested in this
0000    ;               program.
0000    ;
```

```
0000             .SBTTL  DECLARATIONS
0000    ;
0000    ; INCLUDE FILES:
0000    ;
0000             .SBTTL  MACROS
0000    ;
0000    ; MACROS:
0000    ;
0000             .MACRO  LIST
0000             .LIST   MEB
0000             .ENDM   LIST
0000
0000             .MACRO  NLIST
0000             .NLIST  MEB
0000             .ENDM   NLIST
0000
0000             .MACRO  ADJWSL  PAGCNT,LIMIT=#0,WSETLM,STATUS=S^#SS$_NORMAL
0000             LIST
0000                     MOVZWL  STATUS,R3
0000                     MOVL    PAGCNT,R4
0000                     MOVL    LIMIT,R5
0000                     .IF     B,WSETLM
0000                     .IF     DIF,<LIMIT>,<#0>
0000                     MOVAL   W^WRKSETLIM,R6
0000                     .IFF
0000                     CLRL    R6
0000                     .ENDC
0000                     .IFF
0000                     MOVAL   WSETLM,R6
0000                     .ENDC
0000                     BSBW    ADJWSLSUBR
0000             NLIST
0000             .ENDM   ADJWSL
0000
0000             .MACRO  CRETVA STARTVA,ENDVA,STATUS=S^#SS$_NORMAL,-
0000                             INADR=W^INRANGE,RETADR=W^RETRANGE
0000             LIST
0000                     .IF     NB,STARTVA
0000                     MOVL    STARTVA,W^INRANGE
0000                     .ENDC
0000                     .IF     NB,ENDVA
0000                     MOVL    ENDVA,W^INRANGE+4
0000                     .ENDC
0000                     MOVZWL  STATUS,R3
0000                     MOVAL   INADR,R0
0000                     MOVAL   RETADR,R1
0000                     BSBW    CRETVASUBR
0000             NLIST
0000             .ENDM   CRETVA
0000
0000             .MACRO  DELTVA STARTVA,ENDVA,STATUS=S^#SS$_NORMAL,-
0000                             INADR=W^INRANGE,RETADR=W^RETRANGE
0000             LIST
0000                     .IF     NB,STARTVA
0000                     MOVL    STARTVA,W^INRANGE
0000                     .ENDC
0000                     .IF     NB,ENDVA
```

```
0000                 MOVL    ENDVA,W^INRANGE+4
0000                 .ENDC
0000                 MOVZWL  STATUS,R3
0000                 MOVAL   INADR,R0
0000                 MOVAL   RETADR,R1
0000                 BSBW    DELTVASUBR
0000         NLIST
0000         .ENDM   DELTVA
0000
0000         .MACRO  EXPREG  PAGCNT,REGION=#0,STATUS=S^#SS$_NORMAL,-
0000                 RETADR=W^RETRANGE
0000         LIST
0000                 MOVZWL  STATUS,R3
0000                 MOVL    PAGCNT,R4
0000                 MOVAL   RETADR,R1
0000                 .IF     IDN,<REGION>,<#0>
0000                 CLRL    R5
0000                 .IFF
0000                 MOVL    REGION,R5
0000                 .ENDC
0000                 BSBW    EXPREGSUBR
0000         NLIST
0000         .ENDM   EXPREG
0000
0000         .MACRO  LKWSET  STARTVA,ENDVA,STATUS=S^#SS$_WASCLR,-
0000                           INADR=W^INRANGE,RETADR=W^RETRANGE
0000         LIST
0000                 .IF     NB,STARTVA
0000                 MOVL    STARTVA,W^INRANGE
0000                 .ENDC
0000                 .IF     NB,ENDVA
0000                 MOVL    ENDVA,W^INRANGE+4
0000                 .ENDC
0000                 MOVZWL  STATUS,R3
0000                 MOVAL   INADR,R0
0000                 MOVAL   RETADR,R1
0000                 BSBW    LKWSETSUBR
0000         NLIST
0000         .ENDM   LKWSET
0000
0000         .MACRO  ULWSET  STARTVA,ENDVA,STATUS=S^#SS$_WASSET,-
0000                           INADR=W^INRANGE,RETADR=W^RETRANGE
0000         LIST
0000                 .IF     NB,STARTVA
0000                 MOVL    STARTVA,W^INRANGE
0000                 .ENDC
0000                 .IF     NB,ENDVA
0000                 MOVL    STARTVA,W^INRANGE+4
0000                 .ENDC
0000                 MOVZWL  STATUS,R3
0000                 MOVAL   INADR,R0
0000                 MOVAL   RETADR,R1
0000                 BSBW    ULWSETSUBR
0000         NLIST
0000         .ENDM   ULWSET
0000
0000         .MACRO  RANGECHK ONOROFF
```

```
                    0000     164          LIST
                    0000     165          .IF       IDN <ONOROFF>,<OFF>
                    0000     166                    BICL     #CTL$M_RNGCHK,W^CTLFLG
                    0000     167          .IFF
                    0000     168                    BISL     #CTL$M_RNGCHK,W^CTLFLG
                    0000     169          .ENDC
                    0000     170          NLIST
                    0000     171          .ENDM     RANGECHK
```

```
                     0000    173 ;
                     0000    174 ; EQUATED SYMBOLS:
                     0000    175 ;
                     0000    176         $SSDEF
                     0000    177         $SECDEF
                     0000    178         $PRTDEF
                     0000    179         $GBLINI
                     0000    180         $VIELD  CTL,0,<-                        ;DEFINE CONTROL BITS IN R3
                     0000    181                 <MEMLOOP,,MASK>,-               ;LOOP IN MEMORY WRITE LOOP
                     0000    182                 <TSTLOOP,,MASK>,-               ;REDO ENTIRE TEST FROM TOP
                     0000    183                 <PIDMSG,,MASK>,-                ;PUT PROCESS ID IN EACH TYPEOUT
                     0000    184                 <RNGCHK,,MASK>-                 ;ON IF CHECKING RETURN RANGE
                     0000    185         >
         00000010    0000    186         PRT$C_NONE=1@4
                     0000    187 ;
                     0000    188 ; OWN STORAGE:
                     0000    189 ;
```

```
                             0000   191             .SBTTL  DATA STORAGE AND MESSAGE STRINGS
                         00000000   192             .PSECT  DATAC,PAGE,WRT,NOEXE
                             0000   193 INRANGE:
                 00000008    0000   194             .BLKL   2
                             0008   195 RETRANGE:
                 00000010    0008   196             .BLKL   2
                 00000006    0010   197 CTLFLG: .LONG   CTL$M_TSTLOOP!CTL$M_PIDMSG
                 00000018    0014   198 SAVEND: .BLKL   1
                 0000001C    0018   199 PID:    .BLKL   1                                       ;PROCESS ID
                             001C   200 MAXPASSCNT:
                 00000003    001C   201             .LONG   3                                       ;NUMBER OF PASSES TO RUN
                             0020   202 PASSCNT:
                 00000024    0020   203             .BLKL   1                                       ;PASS COUNTER
                             0024   204 WRKSETLIM:
                 00000028    0024   205             .BLKL   1                                       ;RETURNED NEW WORKING SET LIMIT
                             0028   206 WRKSETDEF:
                 00000040    0028   207             .BLKL   6                                       ;DEFAULT, MAX, MIN WORKING SET LIMIT
                 00000030    0040   208             WRKSETMAX=WRKSETDEF+8
                 00000038    0040   209             WRKSETMIN=WRKSETDEF+16
                             0040   210 WRKSETMAXADD:
                 00000044    0040   211             .BLKL   1                                       ;WRKSETMAX-WRKSETDEF
                             0044   212 FAB:    $FAB    FAC=PUT, FNA=OUTNAMADR, FNS=OUTNAMSIZ ;FAB FOR OUTPUT
                             0094   213 RAB:    $RAB    FAB=FAB                                 ;RECORD ACCESS BLOCK FOR OUTPUT
                 000000DC    00D8   214 MSGLEN: .BLKL   1                                       ;RETURN LENGTH FROM FAO
      000000FA'000000A0'     00DC   215 MSGBUFD:.LONG   MSGBUFSIZ,MSGBUF                        ;MESSAGE BUFFER DESCRIPTOR
                             00E4   216 PIDMSGD:
      000000F6'00000004'     00E4   217             .LONG   MSGBUF-PIDMSG,PIDMSG
                             00EC   218 ;
                             00EC   219 ; ***** DO NOT SEPARATE OR REORDER THE FOLLOWING LINES
                             00EC   220 ;
                             00EC   221 MSGBUFID:
                    0A 0D    00EC   222 CRLF:   .BYTE   ^015,^012
  20 53 53 45 43 4F 52 50    00EE   223             .ASCII  $PROCESS $
              20 20 20 20    00F6   224 PIDMSG: .ASCII  $    $
                 0000019A    00FA   225 MSGBUF: .BLKB   160                                     ;MESSAGE BUFFER USED BY FAO
                 000000A0    019A   226             MSGBUFSIZ=.-MSGBUF
                             019A   227 ;
                             019A   228 ; ***** DO NOT SEPARATE OR REORDER THE PRECEEDING LINES
                             019A   229 ;
```

```
                                 00000000  231          .PSECT  CODE,PAGE,NOWRT,EXE
                                     0000  232
                                     0000  233 OUTNAMADR:
      54 55 50 54 55 4F 24 53 59 53  0000  234          .ASCII  /SYS$OUTPUT/
                           0000000A  000A  235          OUTNAMSIZ=.-OUTNAMADR
                                     000A  236
                                     000A  237 CRETVAERRADR:
52 52 45 20 41 56 54 45 52 43 2F 21  000A  238          .ASCII  $!/CRETVA ERROR - PC = !XL, STATUS WAS !XL, SHOULD BE !XL$
58 21 20 3D 20 43 50 20 2D 20 52 4F  0016
41 57 20 53 55 54 41 54 53 20 2C 4C  0022
4C 55 4F 48 53 20 2C 4C 58 21 20 53  002E
            4C 58 21 20 45 42 20 44  003A
21 20 3D 20 52 44 41 4E 49 09 2F 21  0042  239          .ASCII  $!/     INADR = !XL - !XL,  RETADR = !XL - !XL!/$
52 20 20 2C 4C 58 21 20 2D 20 4C 58  004E
20 4C 58 21 20 3D 20 52 44 41 54 45  005A
               2F 21 4C 58 21 20 2D  0066
                           00000063  006D  240          CRETVAERRSIZ=.-CRETVAERRADR
                                     006D  241
                                     006D  242 DELTVAERRADR:
52 52 45 20 41 56 54 4C 45 44 2F 21  006D  243          .ASCII  $!/DELTVA ERROR - PC = !XL, STATUS WAS !XL, SHOULD BE !XL$
58 21 20 3D 20 43 50 20 2D 20 52 4F  0079
41 57 20 53 55 54 41 54 53 20 2C 4C  0085
4C 55 4F 48 53 20 2C 4C 58 21 20 53  0091
            4C 58 21 20 45 42 20 44  009D
21 20 3D 20 52 44 41 4E 49 09 2F 21  00A5  244          .ASCII  $!/     INADR = !XL - !XL,  RETADR = !XL - !XL!/$
52 20 20 2C 4C 58 21 20 2D 20 4C 58  00B1
20 4C 58 21 20 3D 20 52 44 41 54 45  00BD
               2F 21 4C 58 21 20 2D  00C9
                           00000063  00D0  245          DELTVAERRSIZ=.-DELTVAERRADR
                                     00D0  246
                                     00D0  247 LKWSETERRADR:
52 52 45 20 54 45 53 57 4B 4C 2F 21  00D0  248          .ASCII  $!/LKWSET ERROR - PC = !XL, STATUS WAS !XL, SHOULD BE !XL$
58 21 20 3D 20 43 50 20 2D 20 52 4F  00DC
41 57 20 53 55 54 41 54 53 20 2C 4C  00E8
4C 55 4F 48 53 20 2C 4C 58 21 20 53  00F4
            4C 58 21 20 45 42 20 44  0100
21 20 3D 20 52 44 41 4E 49 09 2F 21  0108  249          .ASCII  $!/     INADR = !XL - !XL,  RETADR = !XL - !XL!/$
52 20 20 2C 4C 58 21 20 2D 20 4C 58  0114
20 4C 58 21 20 3D 20 52 44 41 54 45  0120
               2F 21 4C 58 21 20 2D  012C
                           00000063  0133  250          LKWSETERRSIZ=.-LKWSETERRADR
                                     0133  251
                                     0133  252 ULWSETERRADR:
52 52 45 20 54 45 53 57 4C 55 2F 21  0133  253          .ASCII  $!/ULWSET ERROR - PC = !XL, STATUS WAS !XL, SHOULD BE !XL$
58 21 20 3D 20 43 50 20 2D 20 52 4F  013F
41 57 20 53 55 54 41 54 53 20 2C 4C  014B
4C 55 4F 48 53 20 2C 4C 58 21 20 53  0157
            4C 58 21 20 45 42 20 44  0163
21 20 3D 20 52 44 41 4E 49 09 2F 21  016B  254          .ASCII  $!/     INADR = !XL - !XL,  RETADR = !XL - !XL!/$
52 20 20 2C 4C 58 21 20 2D 20 4C 58  0177
20 4C 58 21 20 3D 20 52 44 41 54 45  0183
               2F 21 4C 58 21 20 2D  018F
                           00000063  0196  255          ULWSETERRSIZ=.-ULWSETERRADR
                                     0196  256
                                     0196  257 EXPREGERRADR:
52 52 45 20 47 45 52 50 58 45 2F 21  0196  258          .ASCII  $!/EXPREG ERROR - PC = !XL, STATUS WAS !XL, SHOULD BE !XL$
58 21 20 3D 20 43 50 20 2D 20 52 4F  01A2
```

```
41 57 20 53 55 54 41 54 53 20 2C 4C  01AE
4C 55 4F 48 53 20 2C 4C 58 21 20 53  01BA
            4C 58 21 20 45 42 20 44  01C6
20 3D 20 54 4E 43 47 41 50 09 2F 21  01CE   259          .ASCII  $!/     PAGCNT = !SL, REGION = P!UB SPACE, $
20 4E 4F 49 47 45 52 20 2C 4C 53 21  01DA
45 43 41 50 53 20 42 55 21 50 20 3D  01E6
                              20 2C  01F2
4C 58 21 20 3D 20 52 44 41 54 45 52  01F4   260          .ASCII  $RETADR = !XL - !XL!/$
            2F 21 4C 58 21 20 2D 20  0200
                           00000072  0208   261          EXPREGERRSIZ=.-EXPREGERRADR
                                     0208   262
                                     0208   263 ADJWSLERRADR:
52 45 20 20 4C 53 57 4A 44 41 2F 21  0208   264          .ASCII  $!/ADJWSL  ERROR - PC = !XL, STATUS WAS !XL, SHOULD BE !XL$
21 20 3D 20 43 50 20 2D 20 52 4F 52  0214
57 20 53 55 54 41 54 53 20 2C 4C 58  0220
55 4F 48 53 20 2C 4C 58 21 20 53 41  022C
         4C 58 21 20 45 42 20 44 4C  0238
20 3D 20 54 4E 43 47 41 50 09 2F 21  0241   265          .ASCII  $!/     PAGCNT = !SL, LIMIT WAS !UW, SHOULD BE !UW!/$
57 20 54 49 4D 49 4C 20 2C 4C 53 21  024D
55 4F 48 53 20 2C 57 55 21 20 53 41  0259
   2F 21 57 55 21 20 45 42 20 44 4C  0265
                           00000068  0270   266          ADJWSLERRSIZ=.-ADJWSLERRADR
                                     0270   267
                                     0270   268 WSETLMCTLADR:
45 53 20 47 4E 49 4B 52 4F 57 2F 21  0270   269          .ASCII  $!/WORKING SET SIZE/LOCKED LIMITS:  $
45 4B 43 4F 4C 2F 45 5A 49 53 20 54  027C
   20 20 3A 53 54 49 4D 49 4C 20 44  0288
2F 4C 55 21 20 54 4C 55 41 46 45 44  0293   270          .ASCII  $DEFAULT !UL/!UL, MAX !UL/!UL, MIN !UL/!UL!/$
4C 55 21 20 58 41 4D 20 2C 4C 55 21  029F
55 21 20 4E 49 4D 20 2C 4C 55 21 2F  02AB
               2F 21 4C 55 21 2F 4C  02B7
                           0000004E  02BE   271          WSETLMCTLSIZ=.-WSETLMCTLADR
                                     02BE   272
                                     02BE   273 RANGERRADR:
4E 41 52 20 4E 52 55 54 45 52 2F 21  02BE   274          .ASCII  $!/RETURN RANGE ERROR - LOCATION = !XL$
4C 20 2D 20 52 4F 52 52 45 20 45 47  02CA
58 21 20 3D 20 4E 4F 49 54 41 43 4F  02D6
                                 4C  02E2
21 20 3D 20 52 44 41 4E 49 09 2F 21  02E3   275          .ASCII  $!/     INADR = !XL - !XL, RETADR = !XL - !XL!/$
45 52 20 2C 4C 58 21 20 2D 20 4C 58  02EF
2D 20 4C 58 21 20 3D 20 52 44 41 54  02FB
                  2F 21 4C 58 21 20  0307
                           0000004F  030D   276          RANGERRSIZ=.-RANGERRADR
                                     030D   277
                                     030D   278 IDMSGADR:
4E 41 4D 20 59 52 4F 4D 45 4D 2F 21  030D   279          .ASCII  $!/MEMORY MANAGEMENT SERVICES TEST #4 (ADJWSL), PASS !UL!/$
56 52 45 53 20 54 4E 45 4D 45 47 41  0319
34 23 20 54 53 45 54 20 53 45 43 49  0325
50 20 2C 29 4C 53 57 4A 44 41 28 20  0331
            2F 21 4C 55 21 20 53 53 41  033D
                           00000039  0346   280          IDMSGSIZ=.-IDMSGADR
                                     0346   281
                                     0346   282 RUN1_MSGADR:
20 20 2A 2A 2A 2A 2A 20 20 20 2F 21  0346   283          .ASCII  $!/   *****   TEST WILL NOW BE RUN USING NORMAL VA SPACE   *****$
4E 20 4C 4C 49 57 20 54 53 45 54 20  0352
53 55 20 4E 55 52 20 45 42 20 57 4F  035E
56 20 4C 41 4D 52 4F 4E 20 47 4E 49  036A
```

```
2A 2A 20 20 20 45 43 41 50 53 20 41  0376
                            2A 2A 2A  0382
                            20 2F 21  0385    284             .ASCII  $!/ $
                            00000042  0388    285             RUN1_MSGSIZ=.-RUN1_MSGADR
                                      0388    286
                                      0388    287 PIDCTLADR:
                            4C 55 21  0388    288             .ASCII  $!UL$
                            00000003  038B    289             PIDCTLSIZ=.-PIDCTLADR
                                      038B    290
```

```
                                  038B   292 ;
                                  038B   293 ; STRING DESCRIPTORS
                                  038B   294 ;
                                  038B   295         .ALIGN  LONG
                                  038C   296
                                  038C   297 CRETVAERR:
             0000000A'00000063    038C   298         .LONG   CRETVAERRSIZ,CRETVAERRADR
                                  0394   299 DELTVAERR:
             0000006D'00000063    0394   300         .LONG   DELTVAERRSIZ,DELTVAERRADR
                                  039C   301 EXPREGERR:
             00000196'00000072    039C   302         .LONG   EXPREGERRSIZ,EXPREGERRADR
                                  03A4   303 LKWSETERR:
             000000D0'00000063    03A4   304         .LONG   LKWSETERRSIZ,LKWSETERRADR
                                  03AC   305 ULWSETERR:
             00000133'00000063    03AC   306         .LONG   ULWSETERRSIZ,ULWSETERRADR
                                  03B4   307 ADJWSLERR:
             00000208'00000068    03B4   308         .LONG   ADJWSLERRSIZ,ADJWSLERRADR
                                  03BC   309 WSETLMCTL:
             00000270'0000004E    03BC   310         .LONG   WSETLMCTLSIZ,WSETLMCTLADR
                                  03C4   311 RANGERR:
             000002BE'0000004F    03C4   312         .LONG   RANGERRSIZ,RANGERRADR
                                  03CC   313 IDMSG:
             0000030D'00000039    03CC   314         .LONG   IDMSGSIZ,IDMSGADR
                                  03D4   315 RUN1_MSG:
             00000346'00000042    03D4   316         .LONG   RUN1_MSGSIZ,RUN1_MSGADR
                                  03DC   317 PIDCTL:
             00000388'00000003    03DC   318         .LONG   PIDCTLSIZ,PIDCTLADR
                                  03E4   319
```

```
                               03E4   321         .SBTTL  INITIALIZATION
                               03E4   322 ;*******************************************************************************
                               03E4   323 ;PROGRAM DESCRIPTION:
                               03E4   324 ;
                               03E4   325 ; THIS PROGRAM TESTS THE FOLLOWING SYSTEM SERVICES:
                               03E4   326 ;       $ADJWSL
                               03E4   327 ;
                               03E4   328 ; THE PROGRAM DOES SEVERAL WORKING SET LIMIT ADJUSTMENTS TO CHECK
                               03E4   329 ; THAT THE SERVICE PERFORMS CORRECTLY.  FOLLOWING THIS THE PROGRAM
                               03E4   330 ; FORCES POSSIBLE ERROR PATHS FOR THE ABOVE MENTIONED SYSTEM SERVICE.
                               03E4   331 ; THREE PASSES ARE MADE THROUGH THE TEST LOOP TO ENSURE PATH
                               03E4   332 ; REPEATABILITY.  ONLY REGULAR VA SPACE IS USED IN THIS TEST PROGRAM
                               03E4   333 ; AS THE ADJWSL SYSTEM SERVICE IS NOT AFFECTED BY MEMORY ALLOCATION.
                               03E4   334 ;
                               03E4   335 ; REFER TO MASD$:[MMGTST.COM]MMGTST.RAP FOR FURTHER INFORMATION
                               03E4   336 ; REGARDING JUST HOW COMPLETELY THE AVOCE MENTIONED SYSTEM SERVICES
                               03E4   337 ; ARE TESTED BY THIS PROGRAM.
                               03E4   338 ;
                               03E4   339 ;*PRIVILEGES:
                               03E4   340 ; THIS PROGRAM NEEDS NO SPECIAL PRIVILEGES TO EXECUTE.
                               03E4   341 ;********************************************************************************
                               03E4   342 ;
                               03E4   343 ; START HERE
                               03E4   344 ;
                         0000  03E4   345 START:  .WORD   0                                  ;ENTRY MASK
                               03E6   346         $OPEN   W^FAB                              ;OPEN THE FILE "$OUTPUT"
              0E 50      E9    03F1   347         BLBC    R0,10$                             ;BRANCH IF ERROR
                               03F4   348         $CONNECT W^RAB                             ;CONNECT THE RECORD ACCESS BLOCK
              09 50      E8    03FF   349         BLBS    R0,20$
                               0402   350 10$:    $EXIT_S R0                                 ;EXIT WITH STATUS IN R0
     00000020'EF    01   D0    040B   351 20$:    MOVL    #1,PASSCNT                         ;INITIALIZE THE PASS COUNT
                               0412   352         $RESUME_S PID                              ;SET UP PROCESS ID
50   00000018'EF         3C    0421   353         MOVZWL  PID,R0
                               0428   354         $FAO_S  PIDCTL,MSGLEN,PIDMSGD,R0           ;INIT THE PROCESS ID STRING
                               0440   355 ;
                               0440   356 ;  INFORM OPERATOR THAT TESTS WILL BE RUN USING ONLY NORMAL VA SPACE
                               0440   357 ;
                               0440   358         $FAO_S  RUN1_MSG,MSGLEN,MSGBUFD            ;INFORM OPR NORMAL VA USED FOR TEST
              032F       30    0456   359         BSBW    TYPEMSGBUF
        0010'CF     04   CA    0459   360         BICL    #CTL$M_PIDMSG,W^CTLFLG             ;STOP PROCESS ID FROM PRINTING
                               045E   361 RSTART:
                               045E   362         RANGECHK ON
        0010'CF     08   C8    045E                     BISL    #CTL$M_RNGCHK,W^CTLFLG
                               0463   363         $FAO_S  IDMSG,MSGLEN,MSGBUFD,PASSCNT
              0305       30    0480   364         BSBW    TYPEMSGBUF
                               0483   365         EXPREG  #1
              53    01   3C    0483                     MOVZWL  S^#SS$_NORMAL,R3
              54    01   D0    0486                     MOVL    #1,R4
51      0008'CF          DE    0489                     MOVAL   W^RETRANGE,R1
                    55   D4    048E                     CLRL    R5
              01BF       30    0490                     BSBW    EXPREGSUBR
52      0008'CF          7D    0493   366         MOVQ    W^RETRANGE,R2
        0000'CF     52   7D    0498   367         MOVQ    R2,W^INRANGE
        0014'CF     52   D0    049D   368         MOVL    R2,W^SAVEND
```

```
                                     04A2  370         .SBTTL  ADD TO WORKING SET TEST
                                     04A2  371 ;
                                     04A2  372 ; TEST ADJWSL
                                     04A2  373 ;
                                     04A2  374         CRETVA  W^SAVEND,#1@30-1,#SS$ VASFULL
           0000'CF    0014'CF  D0  04A2                    MOVL     W^SAVEND,W^INRANGE
       0004'CF    3FFFFFFF 8F  D0  04A9                    MOVL     #1@30-1,W^INRANGE+4
                53    0244 8F  3C  04B2                    MOVZWL   #SS$ VASFULL,R3
                50    0000'CF  DE  04B7                    MOVAL    W^INRANGE,R0
                51    0008'CF  DE  04BC                    MOVAL    W^RETRANGE,R1
                         00EB  30  04C1                    BSBW     CRETVASUBR
                7E    0008'CF  7D  04C4  375         MOVQ    W^RETRANGE,-(SP)                   ;SAVE RANGE FOR DEAD PAGE TABLE TEST
                5A    0028'CF  DE  04C9  376         MOVAL   W^WRKSETDEF,R10
                                     04CE  377         ADJWSL  #0,WSETLM=(R10)+                   ;FIND DEFAULT WORKING SET LIMIT
                53         01  3C  04CE                    MOVZWL   S^#SS$_NORMAL,R3
                54         00  D0  04D1                    MOVL     #0,R4
                55         00  D0  04D4                    MOVL     #0,R5
                56         8A  DE  04D7                    MOVAL    (R10)+,R6
                         0258  30  04DA                    BSBW     ADJWSLSUBR
                         02E2  30  04DD  378         BSBW    MAXPAGLOCK                         ;DETERMINE MAXIMUM PAGES THAT MAY BE
                                     04E0  379         ADJWSL  #1@30,WSETLM=(R10)+                ;EXTEND LIMIT TO MAX
                53         01  3C  04E0                    MOVZWL   S^#SS$_NORMAL,R3
            54    40000000 8F  D0  04E3                    MOVL     #1@30,R4
                55         00  D0  04EA                    MOVL     #0,R5
                56         8A  DE  04ED                    MOVAL    (R10)+,R6
                         0242  30  04F0                    BSBW     ADJWSLSUBR
0040'CF    0030'CF    0028'CF  C3  04F3  380         SUBL3   W^WRKSETDEF,W^WRKSETMAX,W^WRKSETMAXADD
                         02C2  30  04FD  381         BSBW    MAXPAGLOCK                         ;DETERMINE MAX PAGES LOCKED
                                     0500  382         ADJWSL  #-<1@30>,WSETLM=(R10)+             ;CONTRACT LIMIT TO MIN
                53         01  3C  0500                    MOVZWL   S^#SS$_NORMAL,R3
            54    C0000000 8F  D0  0503                    MOVL     #-<1@30>,R4
                55         00  D0  050A                    MOVL     #0,R5
                56         8A  DE  050D                    MOVAL    (R10)+,R6
                         0222  30  0510                    BSBW     ADJWSLSUBR
                         02AC  30  0513  383         BSBW    MAXPAGLOCK                         ;NO .OF PAGES THAT CAN BE LOCKED
                                     0516  384 ;
                                     0516  385 ; WITH MINIMUM WORKING SET LIST, TOUCH A PAGE IN EACH PAGE TABLE
                                     0516  386 ; TO FORCE THE DEAD PAGE TABLE LOGIC
                                     0516  387 ;
                           03  BA  0516  388         POPR    #^M<R0,R1>                         ;RECOVER RANGE FROM CRETVA
                                     0518  389 TOUCH_EACH_PT:
                           60  D6  0518  390         INCL    (R0)
 FFF4 50    00010000 8F    51  F1  051A  391         ACBL    R1,#^X10000,R0,TOUCH_EACH_PT
                                     0524  392
     50    0028'CF    0038'CF  C3  0524  393         SUBL3   W^WRKSETMIN,W^WRKSETDEF,R0
                                     052C  394         ADJWSL  R0,WSETLM=W^WRKSETLIM              ;BACK TO DEFAULT SIZE
                53         01  3C  052C                    MOVZWL   S^#SS$_NORMAL,R3
                54         50  D0  052F                    MOVL     R0,R4
                55         00  D0  0532                    MOVL     #0,R5
                56    0024'CF  DE  0535                    MOVAL    W^WRKSETLIM,R6
                         01F8  30  053A                    BSBW     ADJWSLSUBR
                                     053D  395         RANGECHK OFF
                0010'CF    08  CA  053D                    BICL     #CTL$M RNGCHK,W^CTLFLG
                                     0542  396         DELTVA  #1@30-1,W^SAVEND
       0000'CF    3FFFFFFF 8F  D0  0542                    MOVL     #1@30-1,W^INRANGE
           0004'CF    0014'CF  D0  054B                    MOVL     W^SAVEND,W^INRANGE+4
                53         01  3C  0552                    MOVZWL   S^#SS$_NORMAL,R3
           50   0000'CF   DE  0555                        MOVAL   W^INRANGE,R0
           51   0008'CF   DE  055A                        MOVAL   W^RETRANGE,R1
                   0061   30  055F                        BSBW    DELTVASUBR
                              0562   397          RANGECHK ON
         0010'CF     08   C8  0562                        BISL    #CTL$M_RNGCHK,W^CTLFLG
                              0567   398          $FAOL_S WSETLMCTL,MSGLEN,MSGBUFD,WRKSETDEF
                   0201   30  0584   399          BSBW    TYPEMSGBUF
```

```
                         0587   401         .SBTTL  ADJWSL FORCE ERRORS
                         0587   402 ;
                         0587   403 ; FORCE ERRORS FROM ADJUST WORKING SET LIMIT
                         0587   404 ;
                         0587   405         ADJWSL  #1,WSETLM=W^4,STATUS=#SS$_ACCVIO ;WSETLM NOT ACCESSIBLE
           53    0C   3C 0587                       MOVZWL  #SS$_ACCVIO,R3
           54    01   D0 058A                       MOVL    #1,R4
           55    00   D0 058D                       MOVL    #0,R5
      56   0004'CF    DE 0590                       MOVAL   W^4,R6
             019D     30 0595                       BSBW    ADJWSLSUBR
```

```
        0C 0020'CF    001C'CF   F3  0598    407          AOBLEQ  W^MAXPASSCNT,W^PASSCNT,160$
                      50    01  D0  05A0    408 150$:    MOVL    #1,R0
                                    05A3    409          $EXIT_S R0
                          FEAF  31  05AC    410 160$:    BRW     RSTART
                          05AF           .SBTTL  SUBROUTINES TO CALL THE SERVICES
                          05AF   ;
                          05AF   ; INPUT:
                          05AF   ;
                          05AF   ;       R0 = INADR
                          05AF   ;       R1 = RETADR
                          05AF   ;       R3 = DESIRED STATUS
                          05AF   ;
                          05AF   ; OUTPUT:
                          05AF   ;
                          05AF   ;       R2 PRESERVED
                          05AF   ;
                          05AF   CRETVASUBR:
                          05AF           $CRETVA_S (R0),(R1)
  51     FDCC CF     DE   05BC           MOVAL   W^CRETVAERR,R1                  ;ERROR CONTROL STRING
                3C   11   05C1           BRB     CHECK1
                          05C3   ;
                          05C3   ; INPUT:
                          05C3   ;
                          05C3   ;       R0 = INADR
                          05C3   ;       R1 = RETADR
                          05C3   ;       R3 = DESIRED STATUS
                          05C3   ;
                          05C3   ; OUTPUT:
                          05C3   ;
                          05C3   ;       R2 PRESERVED
                          05C3   ;
                          05C3   DELTVASUBR:
                          05C3           $DELTVA_S (R0),(R1)
  51     FDC0 CF     DE   05D0           MOVAL   W^DELTVAERR,R1                  ;ERROR CONTROL STRING
                28   11   05D5           BRB     CHECK1
```

```
                         05D7   444 ;
                         05D7   445 ; INPUT:
                         05D7   446 ;
                         05D7   447 ;         R0 = INADR
                         05D7   448 ;         R1 = RETADR
                         05D7   449 ;         R3 = DESIRED STATUS
                         05D7   450 ;
                         05D7   451 ; OUTPUT:
                         05D7   452 ;
                         05D7   453 ;         R2 PRESERVED
                         05D7   454 ;
                         05D7   455 LKWSETSUBR:
                         05D7   456           $LKWSET_S (R0),(R1)
 51    FDBC CF      DE   05E4   457           MOVAL    W^LKWSETERR,R1                   ;ERROR CONTROL STRING
              14    11   05E9   458           BRB      CHECK1
                         05EB   459 ;
                         05EB   460 ; INPUT:
                         05EB   461 ;
                         05EB   462 ;         R0 = INADR
                         05EB   463 ;         R1 = RETADR
                         05EB   464 ;         R3 = DESIRED STATUS
                         05EB   465 ;
                         05EB   466 ; OUTPUT:
                         05EB   467 ;
                         05EB   468 ;         R2 PRESERVED
                         05EB   469 ;
                         05EB   470 ULWSETSUBR:
                         05EB   471           $ULWSET_S        (R0),(R1)
 51    FDB0 CF      DE   05F8   472           MOVAL            W^ULWSETERR,R1           ;ERROR CONTROL STRING
              00    11   05FD   473           BRB              CHECK1
                         05FF   474
```

```
                          05FF   476 CHECK1:
         53     50    D1  05FF   477         CMPL    R0,R3                                   ;STATUS AS DESIRED
                4B    13  0602   478         BEQL    10$                                     ;BRANCH IF YES
   53    0244   8F    B1  0604   479         CMPW    #SS$_VASFULL,R3                         ;IF EXPECTING VIRTUAL ADDRESS SPACE
                05    12  0609   480         BNEQ    5$
         50     1C    B1  060B   481         CMPW    #SS$_EXQUOTA,R0                         ;THEN EXCEEDS QUOTA MAY ALSO BE RETU
                3F    13  060E   482         BEQL    10$
                54    DD  0610   483 5$:     PUSHL   R4
      54     04 AE    D0  0612   484         MOVL    4(SP),R4                                ;ADDRESS OF ERROR
                          0616   485         $FAO_S  (R1),MSGLEN,MSGBUFD,R4,R0,R3,-
                          0616   486                 INRANGE,INRANGE+4,RETRANGE,RETRANGE+4
                10    BA  0649   487         POPR    #^M<R4>
              013A    30  064B   488         BSBW    TYPEMSGBUF
                05        064E   489         RSB
                          064F   490 10$:
              0069    31  064F   491         BRW     RANGECHK                                ;GO CHECK THE RETURN RANGE
```

```
                    0652     ;
                    0652     ; INPUT:
                    0652     ;
                    0652     ;          R1 = RETADR
                    0652     ;          R3 = DESIRED STATUS
                    0652     ;          R4 = PAGCNT
                    0652     ;          R5 = REGION
                    0652     ;
                    0652     ; OUTPUT:
                    0652     ;
                    0652     ;          R2 PRESERVED
                    0652     ;
                    0652     EXPREGSUBR:
                    0652               $EXPREG_S R4,(R1),,R5
 51   FD37 CF   DE  0661               MOVAL   W^EXPREGERR,R1                  ;ERROR CONTROL STRING
```

```
                                     0666    509 CHECK2:
                       53    50   D1 0666    510         CMPL    R0,R3                            ;STATUS AS DESIRED?
                             39   13 0669    511         BEQL    10$                              ;BRANCH IF YES
                             56   DD 066B    512         PUSHL   R6
                    56    04 AE   D0 066D    513         MOVL    4(SP),R6                         ;ADDRESS OF ERROR
                                     0671    514         $FAO_S  (R1),MSGLEN,MSGBUFD,R6,R0,R3,R4,R5,-
                                     0671    515                 RETRANGE,RETRANGE+4
                       0040 8F    BA 069C    516         POPR    #^M<R6>
                          00E5    30 06A0    517         BSBW    TYPEMSGBUF
                             05      06A3    518         RSB
             0000'CF   0008'CF    D0 06A4    519 10$:    MOVL    W^RETRANGE,W^INRANGE             ;MAKE INPUT RANGE LOOK LIKE CRETVA/D
                             54   D7 06AB    520         DECL    R4
                  54    54   09   78 06AD    521         ASHL    #9,R4,R4
        0004'CF   0000'CF    54   C1 06B1    522         ADDL3   R4,W^INRANGE,W^INRANGE+4
                             00   11 06B9    523         BRB     RANGECHK                         ;AND CHECK THE RETURN RANGE
                                     06BB    524
                                     06BB    526 RANGECHK:
               73 0010'CF   03   E1  06BB    527         BBC     #CTL$V_RNGCHK,W^CTLFLG,40$      ;BRANCH IF RANGE CHECK IS DISABLED
                         70 50   E9  06C1    528         BLBC    R0,40$                          ;IF ERROR IN SERVICE, SKIP THE RANGE
                  50   0000'CF   7D  06C4    529         MOVQ    W^INRANGE,R0                    ;R0 = STARVA, R1 = ENDVA
                       51   50   D1  06C9    530         CMPL    R0,R1                           ;WHICH DIRECTION?
                            12   1A  06CC    531         BGTRU   10$                             ;BRANCH IF BACKWARDS
                            04   1F  06CE    532         BLSSU   5$                              ;BRANCH IF FORWARDS
                    0C 50   1E   E0  06D0    533         BBS     #30,R0,10$                      ;FOR EQUAL, P0 SPACE FORWARDS, P1 BA
                                     06D4    534 ;
                                     06D4    535 ; REQUESTED RANGE IS FORWARDS
                                     06D4    536 ;
                  50   01FF 8F   AA  06D4    537 5$:     BICW    #^X1FF,R0                       ;FROM BYTE 0 OF STARTVA
                  51   01FF 8F   A8  06D9    538         BISW    #^X1FF,R1                       ;THROUGH LAST BYTE OF ENDVA
                            0A   11  06DE    539         BRB     20$                             ;
                                     06E0    540 ;
                                     06E0    541 ; GOING BACKWARDS IN VIRTUAL ADDRESS SPACE
                                     06E0    542 ;
                  50   01FF 8F   A8  06E0    543 10$:    BISW    #^X1FF,R0                       ;LAST BYTE OF STARTVA
                  51   01FF 8F   AA  06E5    544         BICW    #^X1FF,R1                       ;THROUGH FIRST BYTE OF ENDVA
                  0008'CF   50   D1  06EA    545 20$:    CMPL    R0,W^RETRANGE                   ;IS THIS WHAT WAS RETURNED?
                            07   12  06EF    546         BNEQ    30$                             ;BRANCH IF NOT, ERROR
                  000C'CF   51   D1  06F1    547         CMPL    R1,W^RETRANGE+4                 ;THIS ONE OK TOO?
                            3C   13  06F6    548         BEQL    40$                             ;BRANCH IF YES, RANGE OK
                            53   DD  06F8    549 30$:    PUSHL   R3                              ;SAVE REGISTER
                    53   04 AE   D0  06FA    550         MOVL    4(SP),R3                        ;TO USE FOR ERROR PC
                                     06FE    551         $FAO_S  <W^RANGERR>,MSGLEN,MSGBUFD,R3,- ;FORMAT THE ERROR MESSAGE
                                     06FE    552                 INRANGE,INRANGE+4,RETRANGE,RETRANGE+4
                            08   BA  072F    553         POPR    #^M<R3>                         ;RESTORE SAVE REGISTER
                          0054   30  0731    554         BSBW    TYPEMSGBUF                      ;OUTPUT THE ERROR MESSAGE
                                 05  0734    555 40$:    RSB                                     ;AND RETURN
                                 0735   557 ;
                                 0735   558 ; INPUT:
                                 0735   559 ;
                                 0735   560 ;       R3 = DESIRED STATUS
                                 0735   561 ;       R4 = PAGCNT
                                 0735   562 ;       R5 = DESIRED LIMIT
                                 0735   563 ;       R6 = ADDRESS TO RETURN NEW WORKING SET LIMIT
                                 0735   564 ;
                                 0735   565 ; OUTPUT:
                                 0735   566 ;
                                 0735   567 ;       R2 PRESERVED
                                 0735   568 ;
                                 0735   569 ADJWSLSUBR:
                                 0735   570         $ADJWSL_S R4,(R6)
                                 0740   571         IFNOWRT #4,(R6),10$                     ;SKIP WORKING SET LIMIT CHECK
                                 0746   572                                                 ;IF NEW LIMIT WAS NOT RETURNED
                       55   D5   0746   573         TSTL    R5                              ;ALSO SKIP THE CHECK
                       05   13   0748   574         BEQL    10$                             ;IF ZERO WAS SPECIFIED
                 66    55   B1   074A   575         CMPW    R5,(R6)                         ;OTHERWISE CHECK DESIRED WORKING
                                 074D   576                                                 ;SET LIMIT AGAINST THAT RETURNED
                       05   12   074D   577         BNEQ    20$                             ;BRANCH IF ERROR
                                 074F   578 10$:
                 53    50   D1   074F   579         CMPL    R0,R3                           ;STATUS AS DESIRED?
                       33   13   0752   580         BEQL    30$                             ;BRANCH IF YES
                                 0754   581 20$:
                       57   DD   0754   582         PUSHL   R7
              57    04 AE   D0   0756   583         MOVL    4(SP),R7                        ;ADDRESS OF ERROR
                                 075A   584         $FAO_S  ADJWSLERR,MSGLEN,MSGBUFD,R7,R0,R3,-
                                 075A   585                 R4,WRKSETLIM,R5
                     57   8ED0   0781   586         POPL    R7
                   0001     30   0784   587         BSBW    TYPEMSGBUF
                                 0787   588 30$:
                            05   0787   589         RSB
```

```
                              0788   591            .SBTTL  MISCELLANEOUS SUBROUTINES
                              0788   592 ;
                              0788   593 ; TYPE A MESSAGE
                              0788   594 ;          MSGBUF IS THE ADDRESS OF THE BEGINNING OF THE STRING
                              0788   595 ;          MSGLEN CONTAINS THE SIZE (IN BYTES) OF THE STRING
                              0788   596 ;
                              0788   597 TYPEMSGBUF:
       50   00D8'CF      D0   0788   598            MOVL     W^MSGLEN,R0                            ;SIZE TO R0
       51   00FA'CF      DE   078D   599            MOVAL    W^MSGBUF,R1                            ;ADDRESS TO R1
    08 0010'CF      02   E1   0792   600            BBC      #CTL$V_PIDMSG,W^CTLFLG,5$              ;BRANCH IF NO PROCESS ID REQUIRED
       51   00EC'CF      DE   0798   601            MOVAL    W^MSGBUFID,R1                          ;ADDRESS INCLUDING PID MSG
            50      0E'  C0   079D   602            ADDL     S^#<MSGBUF-MSGBUFID>,R0                ;INCLUDE EXTRA BYTES IN COUNT
                              07A0   603 5$:
       00BC'CF      51   D0   07A0   604            MOVL     R1,W^RAB+RAB$L_RBF                     ;SET BUFFER ADDRESS
       00B6'CF      50   B0   07A5   605            MOVW     R0,W^RAB+RAB$W_RSZ                     ;AND SIZE
                              07AA   606            $PUT     W^RAB                                  ;OUTPUT THE MESSAGE
               01   50   E9   07B5   607            BLBC     R0,20$
                         05   07B8   608            RSB
                              07B9   609 20$:       $EXIT_S R0                                      ;EXIT WITH ERROR STATUS
                              07C2   610 ;
                              07C2   611 ; INPUT:
                              07C2   612 ;
                              07C2   613 ;          INRANGE CONTAINS INFINITE RANGE OF ADDRESSES PREVIOUSLY CREATED
                              07C2   614 ;          RETRANGE CONTAINS A RANGE OF ADDRESSES
                              07C2   615 ;          R10 CONTAINS ADDRESS TO STORE THE # OF PAGES SPANNED BY RETRANGE
                              07C2   616 ;
                              07C2   617 ; OUTPUT:
                              07C2   618 ;
                              07C2   619 ;          R10 UPDATED TO POINT AT NEXT LONG WORD
                              07C2   620 ;
                              07C2   621 MAXPAGLOCK:
                              07C2   622            LKWSET   STATUS=#SS$_LKWSETFUL                  ;LOCK AS MANY AS ALLOWED
       53   0194 8F      3C   07C2                           MOVZWL   #SS$_LKWSETFUL,R3
       50   0000'CF      DE   07C7                           MOVAL    W^INRANGE,R0
       51   0008'CF      DE   07CC                           MOVAL    W^RETRANGE,R1
                 FE03    30   07D1                           BSBW     LKWSETSUBR
50   000C'CF   0008'CF   C3   07D4   623            SUBL3    W^RETRANGE,W^RETRANGE+4,R0             ;NUMBER OF BYTES IN RANGE
                   24    13   07DC   624            BEQL     20$                                    ;BRANCH IF NONE LOCKED
      50   50    F7 8F   78   07DE   625            ASHL     #-9,R0,R0                              ;NUMBER OF PAGES -1
       8A   50      01   C1   07E3   626            ADDL3    #1,R0,(R10)+                           ;STORE NUMBER OF PAGES
                              07E7   627            RANGECHK OFF
       0010'CF      08   CA   07E7                           BICL     #CTL$M_RNGCHK,W^CTLFLG
                              07EC   628            ULWSET   INADR=W^RETRANGE                       ;UNLOCK THE ONES THAT WERE LOCKED
            53      09   3C   07EC                           MOVZWL   S^#SS$_WASSET,R3
       50   0008'CF      DE   07EF                           MOVAL    W^RETRANGE,R0
       51   0008'CF      DE   07F4                           MOVAL    W^RETRANGE,R1
                 FDEF    30   07F9                           BSBW     ULWSETSUBR
                              07FC   629            RANGECHK ON
       0010'CF      08   C8   07FC                           BISL     #CTL$M_RNGCHK,W^CTLFLG
                         05   0801   630            RSB
                    8A   D4   0802   631 20$:       CLRL     (R10)+                                 ;NO PAGES LOCKED
                         05   0804   632            RSB
                              0805   633
                              0805   634            .END     START
```

```
$$.TAB              = 00000094 R     02      MAXPASSCNT            0000001C R     02
$$.TABEND           = 000000D8 R     02      MSGBUF                000000FA R     02
$$.TMP              = 00000000               MSGBUFD               000000DC R     02
$$.TMP1             = 00000001               MSGBUFID              000000EC R     02
$$.TMP2             = 000000CF               MSGBUFSIZ           = 000000A0
$$T1                = 00000000               MSGLEN                000000D8 R     02
$$T2                = 00000009               OUTNAMADR             00000000 R     03
ADJWSLERR             000003B4 R     03      OUTNAMSIZ           = 0000000A
ADJWSLERRADR          00000208 R     03      PASSCNT               00000020 R     02
ADJWSLERRSIZ        = 00000068               PID                   00000018 R     02
ADJWSLSUBR            00000735 R     03      PIDCTL                000003DC R     03
BIT...              = 00000004               PIDCTLADR             00000388 R     03
CHECK1                000005FF R     03      PIDCTLSIZ           = 00000003
CHECK2                00000666 R     03      PIDMSG                000000F6 R     02
CRETVAERR             0000038C R     03      PIDMSGD               000000E4 R     02
CRETVAERRADR          0000000A R     03      PRT$C_NONE          = 00000010
CRETVAERRSIZ        = 00000063               RAB                   00000094 R     02
CRETVASUBR            000005AF R     03      RAB$B_RAC           = 0000001E
CRLF                  000000EC R     02      RAB$C_BID           = 00000001
CTL$M_MEMLOOP       = 00000001               RAB$C_BLN           = 00000044
CTL$M_PIDMSG        = 00000004               RAB$C_SEQ           = 00000000
CTL$M_RNGCHK        = 00000008               RAB$L_CTX           = 00000018
CTL$M_TSTLOOP       = 00000002               RAB$L_RBF           = 00000028
CTL$V_MEMLOOP       = 00000000               RAB$L_ROP           = 00000004
CTL$V_PIDMSG        = 00000002               RAB$W_RSZ           = 00000022
CTL$V_RNGCHK        = 00000003               RANGECHK              000006BB R     03
CTL$V_TSTLOOP       = 00000001               RANGERR               000003C4 R     03
CTLFLG                00000010 R     02      RANGERRADR            000002BE R     03
DELTVAERR             00000394 R     03      RANGERRSIZ          = 0000004F
DELTVAERRADR          0000006D R     03      RETRANGE              00000008 R     02
DELTVAERRSIZ        = 00000063               RSTART                0000045E R     03
DELTVASUBR            000005C3 R     03      RUN1_MSG              000003D4 R     03
EXPREGERR             0000039C R     03      RUN1_MSGADR           00000346 R     03
EXPREGERRADR          00000196 R     03      RUN1_MSGSIZ         = 00000042
EXPREGERRSIZ        = 00000072               SAVEND                00000014 R     02
EXPREGSUBR            00000652 R     03      SIZ...              = 00000001
FAB                   00000044 R     02      SS$_ACCVIO          = 0000000C
FAB$C_BID           = 00000003               SS$_EXQUOTA         = 0000001C
FAB$C_BLN           = 00000050               SS$_LKWSETFUL       = 00000194
FAB$C_SEQ           = 00000000               SS$_NORMAL          = 00000001
FAB$C_VAR           = 00000002               SS$_VASFULL         = 00000244
FAB$L_ALQ           = 00000010               SS$_WASSET          = 00000009
FAB$L_FOP           = 00000004               START                 000003E4 R     03
FAB$V_CHAN_MODE     = 00000002               SYS$ADJWSL            ********  GX   03
FAB$V_FILE_MODE     = 00000004               SYS$CONNECT           ********  GX   03
FAB$V_LNM_MODE      = 00000000               SYS$CRETVA            ********  GX   03
FAB$V_PUT           = 00000000               SYS$DELTVA            ********  GX   03
FAB$W_GBC           = 00000048               SYS$EXIT              ********  GX   03
IDMSG                 000003CC R     03      SYS$EXPREG            ********  GX   03
IDMSGADR              0000030D R     03      SYS$FAO               ********   X   03
IDMSGSIZ            = 00000039               SYS$FAOL              ********  GX   03
INRANGE               00000000 R     02      SYS$LKWSET            ********  GX   03
LKWSETERR             000003A4 R     03      SYS$OPEN              ********  GX   03
LKWSETERRADR          000000D0 R     03      SYS$PUT               ********  GX   03
LKWSETERRSIZ        = 00000063               SYS$RESUME            ********  GX   03
LKWSETSUBR            000005D7 R     03      SYS$ULWSET            ********  GX   03
MAXPAGLOCK            000007C2 R     03      TOUCH_EACH_PT         00000518 R     03
```

```
TYPEMSGBUF                         00000788 R      03
ULWSETERR                          000003AC R      03
ULWSETERRADR                       00000133 R      03
ULWSETERRSIZ                     = 00000063
ULWSETSUBR                         0000[illegible]EB R      03
WRKSETDEF                          00000028 R      02
WRKSETLIM                          00000024 R      02
WRKSETMAX                        = 00000030 R      02
WRKSETMAXADD                       00000040 R      02
WRKSETMIN                        = 00000038 R      02
WSETLMCTL                          000003BC R      03
WSETLMCTLADR                       00000270 R      03
WSETLMCTLSIZ                     = 0000004E

                                                 +----------------+
                                                 ! Psect synopsis !
                                                 +----------------+

PSECT name                         Allocation          PSECT No.  Attributes
----------                         ----------          ---------  ----------
.  ABS  .                          00000000  (     0.)  00 (   0.)  NOPIC    USR    CON    ABS    LCL NOSHR NOEXE NORD   NOWRT NOVEC BYTE
$ABS$                              00000000  (     0.)  01 (   1.)  NOPIC    USR    CON    ABS    LCL NOSHR   EXE   RD     WRT NOVEC BYTE
DATA0                              0000019A  (   410.)  02 (   2.)  NOPIC    USR    CON    REL    LCL NOSHR NOEXE   RD     WRT NOVEC PAGE
CODE                               00000805  (  2053.)  03 (   3.)  NOPIC    USR    CON    REL    LCL NOSHR   EXE   RD   NOWRT NOVEC PAGE

                                              +------------------------+
                                              ! Performance indicators !
                                              +------------------------+

Phase                       Page faults    CPU Time        Elapsed Time
-----                       -----------    --------        ------------
Initialization                       10    00:00:00.06     00:00:01.20
Command processing                   72    00:00:00.72     00:00:04.00
Pass 1                              331    00:00:11.28     00:00:40.53
Symbol table sort                     0    00:00:01.23     00:00:03.23
Pass 2                              139    00:00:02.66     00:00:08.19
Symbol table output                  16    00:00:00.11     00:00:00.24
Psect synopsis output                 2    00:00:00.03     00:00:00.03
Cross-reference output                0    00:00:00.00     00:00:00.00
Assembler run totals                572    00:00:16.10     00:00:57.43

The working set limit was 1350 pages.
65169 bytes (128 pages) of virtual memory were used to buffer the intermediate code.
There were 50 pages of symbol table space allocated to hold 879 non-local and 18 local symbols.
634 source lines were read in Pass 1, producing 20 object records in Pass 2.
49 pages of virtual memory were used to define 42 macros.

                                             +----------------------------+
                                             ! Macro library statistics !
                                             +----------------------------+

Macro library name                           Macros defined
------------------                           --------------
_$255$DUA28:[SYS.OBJ]LIB.MLB;1                            1
_$255$DUA28:[SYSLIB]STARLET.MLB;2                        29
TOTALS (all libraries)                                   30
```

```
1152 GETS were required to define 30 macros.

There were no errors, warnings or information messages.

MACRO/LIS=LIS$:MMGADJWSL/OBJ=OBJ$:MMGADJWSL MSRC$:MMGADJWSL/UPDATE=(ENH$:MMGADJWSL)+EXECML$/LIB
```

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VAX/VMS V4.0

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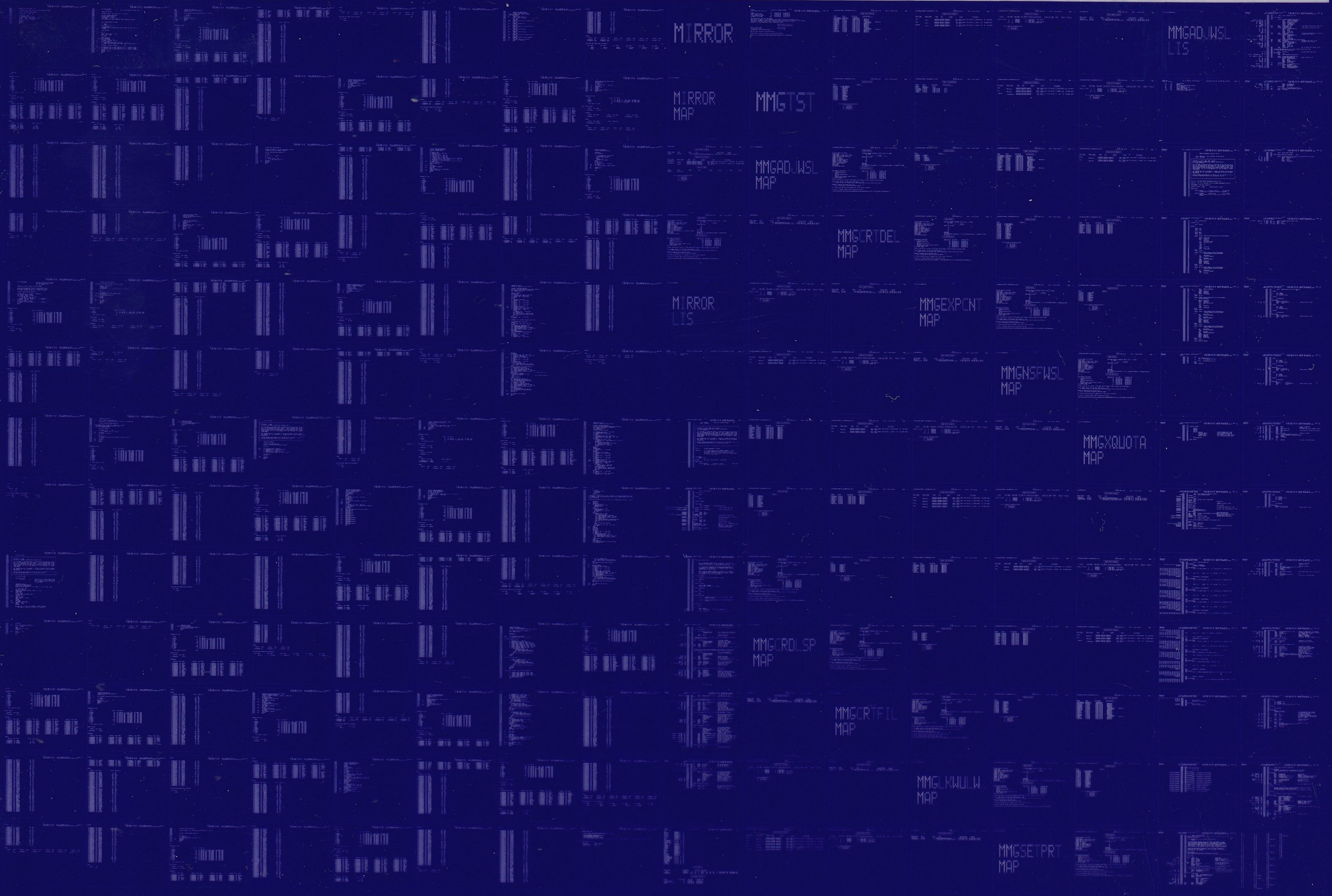

MIRROR

MMGADJWSL
LIS

MIRROR
MAP

MMGTST

MMGADJWSL
MAP

MMGCRTDEL
MAP

MIRROR
LIS

MMGEXPCNT
MAP

MMGNSFWSL
MAP

MMGXQUOTA
MAP

MMGCRDLSP
MAP

MMGCRTFIL
MAP

MMGLKWULW
MAP

MMGSETPRT
MAP

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